AMENDMENTS TO THE SPECIFICATION

Please replace paragraphs [0016], [0019], [0020], [0021], and [0022] with the following amended paragraphs:

[0016] As previously stated above, the shank 14 of the bone screw 10 includes proximal and distal portions 14p, 14d that differ with respect to one another. Referring to FIG. 2A, [[W]]while the length of the proximal and distal portions 14p, 14d can vary depending on the size of the screw 10 and the intended use, in an exemplary embodiment the distal portion 14d preferably has a length l_2 that is at least about 10% of the entire length l_1 of the bone screw 10. More preferably, however, the length l_2 of the distal portion 14d is about 10 mm, regardless of the length l_1 of the bone screw 10, which preferably ranges from about 20 mm to 100 mm. As is further shown in FIG. 2A, the proximal portion 14p of the bone screw 10 can have a minor diameter d_1 that preferably remains substantially constant along a length l_p thereof, while the distal portion 14d has a minor diameter d_2 that decreases in a proximal-to-distal direction to form a taper. The taper facilitates insertion of the distal portion 14d into bone, and it can also be effective to guide the bone screw 10, preventing misalignment and guiding the bone screw toward an optimal trajectory.

[0019] The threads 16, 18 of the bone screw 10 can also have a pitch P that varies depending upon the requirements of a given screw. Referring to FIG. 3, the pitch P is determined by the distance between the threads 16, 18 on one helix, thus the bone screw 10 can have a first pitch P_1 for the first thread 16 and a second pitch P_2 for the second thread 18. In an exemplary embodiment, the pitch P_1, P_2 for each thread 16, 18 is the same and is in the range of about 4 mm to 8 mm, and more preferably is about 6 mm.

[0020] As is further shown in FIGS. 1-3, each thread 16, 18 includes a proximal facing flank 30, a distal facing flank 32, a crest 34, and a root 36. Since the threads 16, 18 are substantially identical to one another, only single reference numbers will be used to describe features of each of the threads 16, 18. Referring to FIG. 3, the proximal and distal facing flanks 30, 32 of the threads 16, 18 define a thickness t_1 which can vary along the length l_1 of the bone

screw 10, as well as between the root 36 and the crest 34 of each thread 16, 18. In an exemplary embodiment, however, the thickness t_1 of the threads 16, 18 remains substantially constant along the length l_1 of the bone screw 10, and it preferably only varies between the root 36 and the crest 34 of the threads 16, 18, decreasing gradually from root 36 to crest 34. This can be achieved by forming proximal and distal facing flanks 30, 32 that converge toward one another between the root 34 and the crest 36 of the threads 16, 18 such that the crest 36 has a width w_c that is less than a width w_r of the root 34, as shown in FIG. 2B, which illustrates a cross-section of one of the threads, e.g., thread 16. While the angle of convergence can vary between the proximal and distal facing flanks 30, 32, in an exemplary embodiment the flanks 30, 32 converge toward one another at the same angle. In another embodiment, the thickness t_1 of the threads 16, 18 can vary depending on the size of the bone screw 10, but the thickness t_1 is preferably less than the smallest minor diameter, e.g., the minor diameter d_2 at the distal end 14b of the shank 14, and more preferably the thickness t_1 of the threads 16, 18 is in the range of about 0.15 to 0.30 mm, and more preferably is about 0.2 m.

[0021] While a major portion of the proximal and distal facing flanks 30, 32 preferably converge toward one another, the threads 16, 18 can, however, include a crest 34 formed from an outer-most portion of the proximal and distal facing flanks 30, 32 that varies in shape and size. For example, the crest 34 can form a sharp edge or a beveled edge. In an exemplary embodiment, as shown in FIG. 2B, the proximal and distal facing flanks 30, 32 terminate at a crest 34 that is substantially flat such that the crest 34 is substantially parallel to the root 36 or shank 14 of the bone screw 10. The width w_c of the crest 34, which is measured by the distance between the proximal and distal facing flanks 30, 32, preferably remains substantially constant along the length of the shank 14. While not illustrated, the crest 34 can have a variety of other configurations, and the crest 34 and root 36 can be positioned at various angles relative to one another. Moreover, the crest 34 can have a width w_c that is substantially the same as the thread thickness t_1.

[0022] The bone screw 10 also includes a major diameter which is defined by the distance between opposed crests 34 of the threads 16, 18. The major diameter of the bone screw

10 preferably varies between the proximal and distal portions 14p, 14d of the bone screw 10. In an exemplary embodiment, as shown in FIG. 2A, the proximal portion 14p has a major diameter D_1 that remains substantially constant along a length of the proximal portion 14p of the screw, and the distal portion 14d has a major diameter D_2 that decreases in a proximal-to-distal direction. The rate of decrease, e.g., the taper rate, of the major diameter D_2 of the distal portion 14d is preferably the same as the taper rate of the minor diameter d_2 of the distal portion 14d. As a result, the threads 16, 18 have a depth d_t (FIG. 3) that is constant along the entire length l_1 of the bone screw 10. In an exemplary embodiment, the distal portion 14d tapers at a rate that results in the distal portion 14d having a major diameter D_2 that is less than or equal to a minor diameter d_1 of the proximal portion 14p of the bone screw 10. Such a configuration is particularly advantageous because, when the bone screw 10 is implanted in bone, the hole created by the distal portion 14d of the shank 14 will have a diameter than is less than or equal to a minor diameter d_1 of the proximal portion 14p of the bone screw 10 to facilitate insertion of the screw 10. In an exemplary embodiment, the taper rate is in the range of about 0.5° to 15°.